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THE SURGEON'S

Circular Letter

CLASSIFICATION CHANGED
TO UNCLASSIFIED
AUTH 1st Ind HQ USAFFE
DATE 19 July 1954
SECURITY OFFICER
Frank B Rogers

MAR - 1952
VOLUME - VII
NUMBER - 3

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THE SURGEON'S Circular Letter

Volume VII - Number 2

MARCH 1952

General Headquarters
Far East Command
Medical Section
APO 500

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REGIONAL MEDICAL CONFERENCE HELD AT 141ST GENERAL HOSPITAL

A one-day regional medical conference for members of the medical profession stationed in southern Japan was held at the 141st General Hospital on 29 February. In attendance were some 100 doctors, representing the Army, Air Force, Navy, and the British Commonwealth, and included 17 invited Japanese physicians.

Welcoming addresses by Major General William E. Shambora, MC, Chief Surgeon, FEC, Brigadier General James P. Cooney, MC, Surgeon, JLCOM, and Colonel Roland K. Charles, Jr., MC, Commanding Officer, 141st General Hospital, started the conference at 0900 hours.

Under the capable direction of the co-chairman, Colonel Charles K. Leedham, MC, Consultant in Internal Medicine, GHQ,FEC, and Lt Colonel John J. Folk, MC, Chief, Medical Service, 141st General Hospital, the morning program included papers on "Japanese Psychiatry" by Capt Avrohm Jacobson, MC, Chief Neuropsychiatric Service, 141st General Hospital; "Clinical Management of Frostbite" by Lt Colonel Kenneth D. Orr, MC, Director, Cold Injury Research Team, Department of the Army; "Medical Observations on PsW" by Lt Colonel Kenneth P. Brown, RAMC, British Commonwealth General Hospital, Kure; "Experimental and Clinical Atherosclerosis" by 1st Lt Joseph P.Murphy, MC, US Army Hospital, Fukuoka; "Clinical Courses of Epidemic Hemorrhagic Fever" by Colonel George M. Powell, MC, Chief, Medical Service, Osaka Army Hospital; and "Clinical Management of Infectious Hepatitis" by Dr. Richard Eckhardt, Director, Hepatitis Research Laboratory, US Army Hospital, Kyoto.

During the afternoon meeting the following papers were presented: "Primary Bronchogenic CA" by Dr. Donald S. King, Expert Consultant to the Surgeon General; "The Effect of Diet and Rest on the Course of Infectious Hepatitis" by Dr. Richard Eckhardt; "Medical Program of the Atomic Bomb Casualty Commission" by Dr. Jarrett H. Folley, Atomic Bomb Casualty Commission; "Recent Developments in the Study of Cold Injury" by Lt Colonel Kenneth D. Orr, MC; "Diffuse Pulmonary Lesions" by Dr. Donald S. King; and "Intravenous ACTH"by Colonel George M. Powell, MC.

KOREAN LEPERS AIDED BY UNCACK

One of history's most pathetic figures is the leper. His lot has never been happy. War only intensifies his misery.

But today 13,000 lepers and 11 leprosaria in Korea are being aided by their government and the United Nations Civil Assistance Command, Korea.

The ROK Ministry of Health is responsible for the physical facilities of the institutions. UNCACK supplies medicine for treatment of selected cases, along with much of the patients' food supply. The UN organization and cooperating relief agencies have also aided in solving the housing and clothing problems.

Dr. Faissal C. Ard of Damascus, Syria, chief of UNCACK's Public Health Section and one of the men responsible for the leper-care program, described conditions in the leper colonies as "satisfactory" and said the medical personnel are "well-trained."

"In spite of all the havoc and destruction of war," he said, "South Korea's 11 leprosaria are better

outfitted for the care of the nation's lepers than they have been for many months, thanks to medicines and supplies made available to UNCACK and to the progressive thinking of the Republic of Korea government."

He added, however, "The leprosaria still are in need of clothing, fuel and dietary supplements."

Patients at the institutions are given a small cash allotment daily by the ROK government, in addition to food and medical supplies. Each institution is allotted arable land on which it can raise part of its food needs, and many of them have swine and chickens.

In addition to the leprosaria, non-infected children of lepers receive care and education in the Samyuk and Tongmyum schools in Taegu.

FAMOUS PAINTING DEDICATED TO NURSES OF THE FREE WORLD

An oil reproduction of Chardin's famous painting, "The Attentive Nurse," was unveiled Sunday, 23 March, at the GHQ Chapel Center, Tokyo, by General Matthew B. Ridgway, and dedicated to the nurses of the free world.

Following the unveiling, General Ridgway solemnly declared: "It seems to me that the more exacting the demands made on us by the increasingly complex life under modern free societies, the more we recognize as essential those qualities which preeminently distinguish the nursing profession ---- high principles, courage and selfless service. I know that I may speak for all of us assembled here this morning ---- as well as for those whose duties would not permit them to attend ---- in recognizing our great debt to this essential segment of our society and the great honor in which we hold them. It seems to me a particularly happy circumstance also that we may do this in the presence of representatives of the clergy whose lives, like those of our nurses, are dedicated to the service of others."

Representing the nurses of the free world at this service were nurses from Belgium, Denmark, France, Greece, Italy, Japan, Netherlands, Norway, South Korea, Sweden, Thailand, Turkey, the United Kingdom and the United States.

Representatives of the Army, Navy and Air Force nurses of the United Nations Command, South Korea and Japan, were guests of the GHQ Chapel Center at an informal reception during the afternoon. At the reception, Lt. Patricia DeBall, ANC, sang "The Nurses' Prayer," which was composed by Major Edith Aynes, Chief Nurse, Japan Logistical Command.

"The Attentive Nurse" was painted by Jean Baptiste Simeon Chardin during the 18th Century, and was reproduced by the Japanese artist, Ki Nagao.

121ST EVACUATION HOSPITAL CITED

Republic of Korea President Syngman Rhee flew to his former capitol city of Seoul on 21 March and personally cited the 121st Evacuation Hospital.

The 121st, which has treated more than 75,000 UN troops since September 1950, won the Presidential Unit Citation for "exceptional performance of medical and surgical services to the gallant men of the United Nations forces."

Later, during the day, the hospital commander, Lt. Colonel Leo J. Butler, became the first member of his hospital staff to wear the unit citation ribbon.

FOOD FACTS

It would seem that Napoleon wasn't far wrong when he made the statement that an army travels on its stomach, judging from a recent unofficial computation by an enlisted man in the ration breakdown section of a certain infantry regiment now on duty in Korea. This mathematical master revealed, for example, that each man in this infantry regiment consumed an average of $2.18 worth of groceries each day. The rations represented approximately 4,500 calories per man per day, as compared to the average male requirement of about 3,600 calories.

An average of 39 items is used every day for meals while in World War II the figure was 28. During World War I the count was 18, and in the Revolutionary War, Washington's men were getting 8 items a day and that included candles used for heat and light.

The current figures on the number of items served daily did not include PX rations. Some 7,500 candy bars and 3,700 packs of cigarettes pass through this regimental ration breakdown section every day.

RECENT DEPARTMENT OF THE ARMY AND FEC PUBLICATIONS

AR 615-360, C-1, 21 Feb 52: Enlisted Personnel - Discharge - General Provisions

AR 35-1705, C-4, 23 Feb 52: Finance and Fiscal - Pay and Allowances, Members of the Organized Reserve Corps, and Officers, Army of the United States

AR 40-15, 20 March 52: Medical Service - Dental Corps

SR 110-1-1, Suppl, 1 Jan 52: Motion Picture and Photographic Services - Index of Army Motion Pictures, Kinescope Recordings, and Film Strips

SR 345-250-60, 21 Jan 52: Records - Records Administration - Maintenance and Disposition of Medical Administration Records

SR 605-60-44, C-1, 25 Jan 52: Officers - Dental Officer Procurement - Dental Military Intern Program

SR 600-450-5, C-1, 29 Jan 52: Personnel - Evaluation and Separation for Physical Disability

SR 310-30-10, 29 Jan 52: Military Publications - Standard Requirements Code

SR 40-1025-90, 4 Feb 52: Medical Service - Remaining Cards

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THE TREATMENT OF STARVATION

Herbert Pollack, M.D.,* Expert Consultant to The Surgeon General, US Army

AT THE present time the medical information available for the treatment of starvation is still incomplete. There is, however, sufficient accumulated knowledge and experience to indicate that serious mistakes frequently can be made.

When large numbers of emaciated individuals are uncovered simultaneously, it is difficult to make a complete diagnosis of each one and individualize therapy. Under these circumstances it becomes necessary to set up broad criteria for classification into groups for therapy. Suggested criteria for this classification are as follows:

DIAGNOSTIC CRITERIA - GROUP I. Extreme Deficiency:

These people are still living only by virtue of the adaptation to low levels of metabolic equilibria. This is the group in which errors in early treatment are most costly. They may weigh from fifty (50) to eighty (80) pounds and represent a loss of 40% or more of their initial body weight. The greater part of the actual remaining body weight is contributed by the comparatively metabolically inert tissue, the skeleton structure. Their daily caloric requirements at this stage may range from five hundred to eight hundred.

The patient in this stage of emaciation usually lies quietly. He is very apathetic. The legs are flexed on the abdomen. The position of the arms and legs may be maintained even when the patient is rolled from side to side. With much effort and persuasion, the patient can extend his extremities indicating no true ankylosis.

The skin is dry, coarse, and cold to the touch. Pigmentation over the pressure points is almost universal. This is usually bilateral and symmetrical and is seen over the ischial tuberosities, sacrum, and the spines of the crest of the ilium.

The extensive atrophy of all the muscles is one of the most striking signs. The skin can be seen to follow the contours of the bony structure. The buttocks are concave and follow the contours of the ilium, and ischium. The skull prominences are easily identified. Winged scapula are almost invariably present. The term skin and bones is truly descriptive.

The eyes are most characteristic. There is an enophthalmus. The sclera present an opaque, porcelain white appearance and few blood vessels can be seen in that tissue.

The blood pressure is usually very low. Systolic readings average about 70 mm of Hg. The diastolic is difficult to record.

There is a pronounced bradycardia as low as 30 beats per minute while the patient is sleeping. Excitement and activity precipitate dyspnea and tachycardia.

The emphasis cannot be placed too strongly on the clinical evaluation of the gastro-intestinal and circulatory aspects of these patients. These patients are in a precarious state of balance. Circulatory collapse resulting in death can be precipitated by violent retching and vomiting. The injudicious use of intravenous fluids can be fatal.

These concepts are most important to bear in mind when starting therapy. The adjustment of the circulatory system and other physiological processes is a narrow one and the maintenance of life depends upon not upsetting this balance too abruptly. Aggressive and enthusiastic therapy abruptly started in an attempt to restore these patients to their previous state may result in a breakdown of these compensatory mechanisms. For these reasons therapy in this group must be started cautiously.

DIAGNOSTIC CRITERIA - GROUP II - General Deficiency:

This group is characterized by a weight loss of about 30% to 50% of their original body weight.

In contrast to Group I who are usually bedridden, this group may be ambulatory and somewhat restless

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and volunteer a whole group of subjective complaints more or less in proportion to the degree of starvation. Hunger, fatigue, weakness, sensitivity to the cold, mentally depressed, and dizzyness when changing position. An early complaint is nocturia and polyuria. A later complaint is explosive diarrhea.

The physical appearance of this group can be summarized as follows: They have an apathetic expression. They are dirty and show complete neglect of personal appearance, and are indifferent as to what impression they may make on others. Their reaction is extremely slow and gives the effect of stupidity. Pigmentation of the skin is usually visible in blotchy areas, edema may or may not be present. The skin is similar to Group I, dry, cold, rough, etc.

DIAGNOSTIC CRITERIA - GROUP III - Mild starvation of short duration, with loss of from 10% to 20% of body weight.

This group presents no real problems and is characterized by a voracious appetite.

THERAPY:

All initial food distribution must be rigidly controlled for the protection of the patients from themselves. It must be recognized that these people are weak, easily fatigued, and usually have polyuria and diarrhea. Their lack of resistance to the cold must be remembered and considered. Adequate warmth and protective clothing for the ambulatory patient must be provided. Quarters must be close to toilet facilities and kept at one level as stair or hill climbing is difficult. These patients must not be kept waiting, standing in lines or syncope may result. Night lights should be made available as some cases of night blindness usually are found in such groups of people.

The first differentiation should be:

Bed Patients:
(1) Seriously ill who require constant nursing care (Group I)
(2) Able to be cared for routinely (Group II)
(3) Those who will shortly become ambulatory (Group II)

Ambulatory Patients:
(1) Not able to help other patients (Group III)
(2) Those capable of undertaking responsibilities for the (Group III) bed patients when there is a shortage of personnel.

(In the transportation of R.U.N.M.P. it is best to keep groups together from the same compound or hutment in the camp. One finds a mutual working arrangement has been worked out which facilitates the problems of the supervising personnel.)

Therapy should be arranged on the basis of the two major groups defined above. The severe emaciation bed ridden patient will require the most delicate handling. To avoid converting an ambulatory patient to a bed patient, extreme care must also be used in the selection of the food items and total amount of food presented to these people in the initial refeeding period.

Simple foods which are physically smooth, low residue, chemically bland, and without too positive a flavour, should be selected.

The overall diet should always be aimed at a high protein low residue type. Vitamins and minerals may be supplied as a supplement as nutritional rehabilitation progresses.

The specific foods selected should include milk and certain milk products, eggs, potatoes, bread or crackers, barley, rice, fish, simple meats, and sugar. Vegetables are bulky, and slow to digest. They should be avoided in the early menus for all,but allowed to the milder ambulatory patients after several days. Beans and other legumes are to be avoided. Salted, smoked, pickled meats and fish must be strictly forbidden.

It is most important to prevent the introduction of table salt into the diet of these people for at least several weeks. This means in cooking and preparation of food as well as at the table. There is sufficient sodium and chloride in most of the foods available to supply the physiologically necessary amounts. Any excess leads to the production of edema in even mild simple starvation and to heart failure in the more advanced cases of the starvation syndrome.

The value of milk products cannot be overemphasized. When fresh or recombined fluid milk is not available the dried skim milk powder can be used in a variety of ways which are valuable both nutritionally and for flavour. It can be added to soups, bread,crackers, gravies, stews, puddings and coffee. Mixed as a thick suspension with water, sugar, and flavor such as coffee powder, it can be drunk or spoon fed in amounts that supply a substantial quantity of protein and calories. These people will be found to tolerate up to 100 grams daily. (A pound tin will supply five people for one day). Evaporated milks are valuable too. A more palatable drink is made by diluting the evaporated milk with equal parts of water and using this as a vehicle for the powdered milk. The quality of the powdered milk is most important in its acceptability. Every effort must be made to supply a high grade, spray dried, fresh product. The whole milk powders have the disadvantage of developing off flavour on standing.

Butter and margarine are useful. The total fat content of the diet should not exceed 20%.

Powdered eggs, when fresh eggs are not available, can be a very important item of the diet. They can be used advantageously in the preparation of eggnogs. About two-thirds dried milk powder and one-third egg powder shaken with water, sugar and flavor, have a very high acceptability, are extremely nutritious and conform to the bland, low-residue characteristics.

A suggested formula which has been found acceptable and can be prepared from foods usually available is as follows:

Evaporated Milk	- 3000 cc	(Seven 14-oz cans)
Water	- 2500 cc	(2½ Canteens)
Eggs, Fresh[1]	- 600 grams	(10 tablespoons full)
Powdered Skim Milk	- 450 grams	(One Pound Tin)
Sugar	- 60 grams	(8 teaspoons full)

Coffee extract or vanilla for flavor

[1]Eggs, powdered, may be substituted, if available. Use 150 grams (10 tablespoons).

A canteen cupful of the above mixture will supply approximately 450 cals and 35 grams of protein.

As a supplement, one-half canteen cupful between meals is suggested.

When the entire subsistence is to be on this type of liquid feeding, a one-fourth canteen cupful every two hours will usually be adequate for instituting a refeeding program.

Egg powders, however, must be handled with due regard to sanitation and the mixtures consumed within four hours of preparation or refrigerated.

One must guard against the development of a belief among patients and even some staff that special foods, vitamin pills and patented preparations have any magic virtue. There is no need of pre-digested or hydrolyzed foods. In fact, the oral protein hydrolysates are distinctly dangerous because of their tendency to provoke diarrhea and vomiting.

SCHEDULE OF TREATMENT:

The first impulse upon recovering people from starvation conditions is to feed them immediately and as much as possible. One must guard against this natural inclination and furthermore one must indoctrinate the patient with the concept that initial uncontrolled refeeding is dangerous.

An initial feeding of a hot milk soup may be supplied at once to all the patients. While they are consuming this simple dish the triage and separation of categories can be set up. One must consistently bear in mind that moderation in the amount of food given at any one time is essential. The extremely ill or moribund patient should get special attention immediately by spoon feeding thick milk powder and sugar suspensions.

For all patients it is better to underfeed than overfeed in the initial phase of the nutritive rehabilitation. Poor selection of foods and large portions will result in distension, diarrhea, and at times circulatory failure. The ambulatory patient can become a bed patient under these circumstances.

The ambulatory patient who presents a moderate to moderately severe degree of starvation should require no more than 2000 calories daily for about the first five days. This can be increased to about 3000 calories during the last few days of the first week. If there is evidence of gastro-intestinal disturbance from the increasing food, the amount of food should be cut back again. After the first week the calories may be increased up to a maximum of 3500 daily with a protein content of from 120 to 150 grams daily. The bland type of food with low salt content should be continued for at least three weeks.

For the more severely emaciated group it is best, if possible, to calculate his approximate daily intake for the immediate past. If this has been in the order of 1000 calories daily, it is safest to start him with an increase of about 50%, that is, up to 1500 calories. Even this amount is best given in the form of liquids (milk soups, milk drinks, etc.) in five or more feedings during the day.

The program should be geared to increasing the nutrient intake slowly at first and subsequently to the maximum rate at which the body can metabolize the food. No attempt should be made in the first 24 to 48 hours to do more than reeducate the gastro intestinal tract to the acceptance of the foods. The initial response to oral feeding frequently determines the speed of convalescence. If a gastroenteritis is provoked convalescence will be unnecessarily prolonged. The patient who is responding in a normal manner will demand more food and at times will be very troublesome. The personnel in charge of feeding must be warned not to relax the discipline under these pressures.

Hexavitamin pills, two - three times daily may be started immediately on all except the most severe groups.

Changes in body weight for the first few weeks are not to be used as a criteria of progress. The total body weight may fluctuate in both directions. One must not be disturbed by a progressive weight loss. This may merely indicate loss of edema due to improved nutrition. The reverse is also true. Do not be too jubilant about rapid gains in body weight. This may indicate an accumulation of edema fluid and is commonly due to excessive salt intake or heart failure.

The use of parenteral therapy such as intravenous amino acid mixtures, protein hydrolysates and glucose, has been advocated by some workers in the past. Experience has demonstrated that this form of therapy is distinctly contraindicated except under the most unusual circumstances. It must be borne in mind that the heart muscle has undergone the same type and degree of atrophy as is visible on the surface of the body in the large striated muscle masses. This means that the cardiac reserve has been lost. The circulatory embarrassment which results from intravenous therapy at this time may lead to pulmonary edema and heart failure.

TREATMENT OF EYE INJURIES

Lt Colonel Forrest E. Hull, MC, Consultant in Ophthalmology, Far East Command

CURRENT instructions relative to the emergency care of eye casualties originally published on Page 99 of the "Symposium on Military Medicine in the Far East Command," September 1951, have been revised as follows:

All cases of eye injuries should be evacuated promptly to the nearest ophthalmologist as absolute litter patients with both eyes patched.

In cases of VII nerve paralysis where the patient cannot close his eyes, the eyelids should be sutured together to prevent exposure keratitis and possible subsequent corneal ulcer.

Prior to evacuation, 300,000 units of penicillin should be administered intramuscularly, and one gram of sulfadiazine should be given 4 times daily, each dosage of the latter to be accompanied by 10 grains of soda bicarbonate by mouth. Local instillation of penicillin, 5000 units per cc and 30% sodium sulfacetamide, 2 drops to the involved eye 4 times daily, is recommended local medication. 10% Sodium sulfacetamide ointment may be substituted for the stronger solution. The use of terramycin ointment, 5 milligrams per gram, or aureomycin ointment, 1 milligram per gram, is recommended as antibiotic substi-

tute for local penicillin therapy in cases that exhibit penicillin sensitivity.

Cases of anterior or posterior uveitis should receive 1% atropine locally prior to evacuation. In any case where return to duty is anticipated within three weeks, the use of 4% homatropine solution locally instead of 1% atropine is recommended as a mydriatic.

Cases of corneal ulcers and corneal foreign bodies should receive 1% atropine or 4% homatropine locally, local antibiotics and sulfonamides, and the eye should be patched.

Purulent eye infections, such as endophthalmitis or panophthalmitis, should receive 1% atropine or 4% homatropine instillations locally. Penicillin and sulfadiazine should be administered systemically, while antibiotics and sodium sulfacetamide should be instilled locally. The eye will be more comfortable if left unpatched.

Cases of intraocular foreign bodies or penetrating wounds of the eye should receive atropine or homatropine, antibiotics and sodium sulfacetamide locally, and penicillin and sulfadiazine systemically. Both eyes should be patched.

The taking of X-rays to localize intraocular or orbital foreign bodies is a precise procedure requiring special equipment and technique and should be deferred until arrival of patient at installation where removal is to be accomplished. Attempting such localizations under field conditions is considered a waste of time and X-ray film.

Patients with suspected retinal detachment or commotio retinae should receive atropine to the involved eye, and should be made an absolute bed patient with both eyes patched, both prior to and during evacuation. A massive vitreous hemorrhage may mask these two conditions; hence, should be managed in the same manner.

Cases exhibiting fresh blood in the anterior chamber should receive neither mydriatic nor miotic and should be evacuated as an absolute litter patient with the head raised approximately 30 degrees. This will permit gravitation of blood inferiorly, in an effort to prevent blood staining of the central area of the cornea.

In cases of severe thermal burns of the eyes, a bland ointment, such as boric acid, will give relief and suffice for the evacuation period. If the burns of the lids are severe and the patient must be retained for any reason, suturing the eyelids together may aid to prevent cicatricial ectropion and subsequent lagophthalmos. Chemical burns should receive copious irrigations of water or normal saline at once to mechanically remove the chemical, and the eye should be dilated in severe cases. If available, warmed and well shaken 5% hydrosulfosol in castor oil instilled in the conjunctival sac after local 1% pontocaine anesthesia may be of value in cases of chemical burns of the eyes, after irrigation has been performed. A pressure bandage should be applied over the involved eye when this drug is used.

More extensive repair of ocular injuries should not be attempted by medical officers not having specialized training in ophthalmic surgery.

THE EARLY FIELD DIAGNOSIS OF EPIDEMIC HEMORRHAGIC FEVER*

William F. Ganong, 1st Lt., MC; Edward Zucker, Capt., MC;
Carroll K. Clawson, Capt., MC; Edward C. Voss, 1st Lt., MC;
Milton L. Klotzbach, 1st Lt., MC; and Kenneth A. Platt, 1st Lt., MC.

DURING the Summer and Autumn of 1951, a U.S.Army Division was deployed south and west of Yonchon, Korea, the center of the area from which the vast majority of the cases of Epidemic Hemorrhagic Fever originated. Between 1 August and 10 December 1951, a total of 346 cases, clinically diagnosed as this disease, were evacuated through the Clearing Station of the Division. Because the early features of this disease are difficult, if not impossible, to differentiate from other acute infections, it was felt that a report of experience gained from these cases would be of interest in emphasizing the points most important in the early diagnosis of Epidemic Hemorrhagic Fever.

There is little in the initial symptomatology that is peculiar to the disease. Certain symptoms, however, were characteristic enough to arouse suspicion. These included the following:

Headache: The headache in early Epidemic Hemorrhagic Fever is mostly frontal or retro-orbital. It is usually severe, and not particularly related to movement of the eyes. This pain and the associated mild photophobia led the patients to hold their eyes shut or to lean on their elbows with their hands over their eyes. Indeed, this eye-holding was common enough to be jokingly referred to as the "Epidemic Hemorrhagic Fever position."

Back Pain: Pain in the lumbar area is a remarkably constant finding early in the course of the disease. Generalized myalgia is also present, but the aching is characteristically most marked in the lumbar region. Its severity is indicated by the fact that several patients were admitted to the Clearing Station with their backs taped. The location and nature of the pain suggests a renal origin, but unlike the pain in renal pathology, costo-vertebral angle tenderness is not marked.

Gastrointestinal Symptoms: Anorexia is almost universal and often the initial symptom. Nausea and vomiting, on the other hand, although common, are not constant early findings. The striking features of these complaints, however, are the absence of other gastrointestinal symptoms. Abdominal pain has been mentioned as a common complaint, but our experience did not bear this out. Indeed, in our cases, pain was rare and diarrhea did not occur.

Physical findings were usually of more diagnostic help than symptoms, even in the early stages of Ep-

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*This paper was read at the Hokkaido Medical Conference, Sapporo, Hokkaido, Japan, 15 February 1952.

idemic Hemorrhagic Fever. The large subconjunctival hemorrhages considered to be a hallmark of the disease were uniformly absent and the wide-spread petechial rash was rarely present in the early days of the illness, although the rapidity of development of the hemorrhagic phenomena varied greatly from case to case. Certain physical findings, however, were remarkably constant, even in early cases, and characteristic enough to be of diagnostic weight. These included the following:

Appearance: The patient with Hemorrhagic Fever typically looks and acts ill. Though consciousness is clear and irritability is not marked, the headache, nausea, and myalgia make the patient very uncomfortable. In addition, the frontal pain and photophobia make him squint slightly, while the suffused, red face and conjunctival changes all contribute to make him look sick. This is in considerable contrast to patients with respiratory infections, malaria, and similar common infections who, with equal degrees of fever, look well by comparison.

Erythema of the Face and Neck: One of the most typical early findings in our cases has been a diffuse and distinctive reddening of the skin, most marked over the face and neck "V", but sometimes also seen over the chest and back. This scarlatiniform erythema is more than a simple febrile flush. It is often severe enough to resemble a sunburn. Close inspection of the skin often shows dilated small vessels in addition to the reddening, which blanches on pressure, the whole picture resembling in many ways the facies of Cushing's Syndrome.

Conjunctival Injection and Palpebral Edema: Although conjunctival hemorrhages are absent in the first days of Epidemic Hemorrhagic Fever, conjunctival changes are usually present and often characteristic enough to be of considerable aid in diagnosis. Slight edema of the upper lids gives the patient a bleary-eyed appearance. The conjunctivae, both bulbar and palpebral, show a fine and sometimes intense injection. The picture resembles that seen in Measles, but without the lacrimation. Petechiae occasionally appear on the conjunctivae, but they were not common in our experience and did not appear early.

Pharyngeal Injection: Intense pharyngeal reddening with dilatation of small blood vessels, but without significant pharyngeal pain was found to be typical of this disease. Because of this pharyngeal reaction, a large number of cases were evacuated from forward units with the diagnosis of Acute Pharyngitis or Tonsillitis. The difference between these cases and the patients with more benign types of pharyngitis, however, was the absence of significant dysphagia or sore throat in the Hemorrhagic Fever patients.

Petechiae: Petechial hemorrhages were frequently absent in early cases. A search for petechiae was conducted in each case, however, because it was found that approximately half the early cases showed a few spots. The first place the rash usually appeared was the palate. The petechiae were seen in small groups and usually appeared after the pharyngeal injection . Twelve to twenty-four hours after palatal petechiae appeared, they could also be found in small numbers along the axillary folds. From there, they spread onto the lateral chest wall and neck; occasionally they were also found on the conjunctivae and eyelids, but as noted above, this was uncommon at division level. The importance of searching for petechiae lies, of course, in the fact that when found, they are diagnostic.

Detailed laboratory studies are admittedly impractical in the field. However, blood counts, smears, and urinalyses are easily done at the Clearing Station, and these laboratory tests were found to be of great assistance in diagnosing Hemorrhagic Fever. This was particularly true in the holding wards of the Company, where frequently repeated laboratory determinations helped greatly to delineate the early picture of the disease. Findings which we found to be of most value in field diagnosis included the following:

Albuminuria: The presence of albumin in the urine, particularly in large amounts, is a typical, but not universal, finding in Hemorrhagic Fever. Some patients even developed petechial rashes before albuminuria was detected. When albumin is present, however, it is of great diagnostic importance, since in the absence of dehydration, the finding of more than a trace of albumin rules out most of the conditions from which this disease must be differentiated. It was also discovered on our holding wards that albuminuria may appear with great rapidity. Several cases were followed with urinalyses twice or three times a day. It was not unusual in these cases to find urinary albumin negative at one time, but strongly positive only four to six hours later. It is therefore important not only to check the urine frequently, but to ignore previously negative results if other findings suggest the diagnosis.

"Mononuclear cells" in the Urine: A laboratory finding apparently rather characteristic of Epidemic Hemorrhagic Fever is the finding of large numbers of oval bodies in the urine. These bodies are two to four times the size of a white blood cell, and probably represent mononuclear phagocytes or renal tubular epithelium, since they show a distinct cell-wall and one, or sometimes two, nucleus-like masses in the center. They often contain vacuoles of a refractile material resembling fat. They appear in the urine often before albumin, and in our experience, seem to be a dependable diagnostic aid.

Because this finding has not been reported elsewhere, a pilot study of the significance of these bodies was attempted at the Clearing Station. Large numbers of these "cells" were found in the urine of 35 consecutive cases of Hemorrhagic Fever. They were absent from 14 normal and several pathologic urines from patients with albuminuria from other causes. On the other hand, the fact that a few of these bodies were found in one presumably normal urine suggests that they are not peculiar to Hemorrhagic Fever. It is impossible to draw conclusions on the basis of this short and incomplete study, but it may be that these bodies are a non-specific response to renal inflammation. However, their abundant occurrence in early Hemorrhagic Fever and their appearance in some cases as the first sign of renal involvement suggests that they may be of considerable if not unique value in early diagnosis.

Lipiduria: Another incidental finding of considerable theoretical interest has been the demonstration of large amounts of a fatty substance in the urine of Hemorrhagic Fever patients. This material is ether-extractable and stains with fat stains. The amount present parallels the severity of the albuminuria, but removal of the albumin by heat and acetic acid precipitation leaves large amounts of

the ether-extractable substance in the filtrate. The significance of this finding has not been determined. Its clinical importance, however, lies in the fact droplets of free lipid are occasionally seen in the urine. These resemble and have been mistaken for red cells, although they are globular, refractile, and quite distinctive on close inspection.

Polymorphonuclear leukocytosis: A rise in the white blood count, due mainly to an increase in polymorphonuclear leukocytes, is a reasonably constant finding in this disease. Because of its non-specific nature, however, its value is limited, although white blood counts and blood smears help in ruling out such diseases as Influenza, Malaria, Infectious Monocucleosis, and early Infectious Hepatitis, diseases sometimes confusingly similar to early Hemorrhagic Fever.

The above-mentioned symptoms, signs, and laboratory findings, taken in total, allow a reasonably accurate diagnosis of Epidemic Hemorrhagic Fever in most cases. They are of particular value, however, in diagnosing atypical cases. Approximately 5% of our cases varied enough from the usual pattern to be remarkable. These cases fell roughly into three groups.

Cases Without Fever: During the period when Hemorrhagic Fever was most common, several patients were admitted to the Clearing Station with complaints of weakness, giddiness, anorexia, back pain, and sometimes headache. They all had temperatures under 99° F., and in most cases were admitted to the holding wards. Subsequently, they all developed moderate albuminuria, nausea, and a petechial rash, although their temperatures remained normal for the three-to-four-day holding period. All were evacuated, and study in rear area hospitals confirmed the diagnosis of Epidemic Hemorrhagic Fever.

Cases Presented as Combat Exhaustion: A few patients were evacuated to the Clearing Station diagnosed as Combat Exhaustion. These cases, possibly because of their personality make-up, complained only of vague myalgia, feeling "rotten", or "unable to take it anymore." Two of them had myriad complaints including most of the symptoms of Hemorrhagic Fever, but these were so overlaid with seemingly functional symptoms that they were overlooked. Fortunately, a temperature reading was taken routinely on all psychiatric cases admitted to the Clearing Station, and after the first few cases of this type were discovered, it also became routine to do urinalyses on any psychiatric case whose story was at all suspicious of Hemorrhagic Fever.

Fevers of Unknown Origin: Cases presented with fever as their only finding are rare, but do occur. Two patients of this type were seen during the month of November. Both denied all symptoms except chilliness and fever, and both had negative physical examinations and laboratory studies when first seen. They subsequently developed petechiae and massive albuminuria, and one of them went into shock.

Differential diagnosis must, of course, include all acute infections common in a young adult male population. Our most common diagnostic errors are illustrated by the cases admitted to the holding wards with other diagnoses, who subsequently developed typical Epidemic Hemorrhagic Fever. There were thirteen such patients. Four were diagnosed Influenza, four Acute Tonsillitis, two Acute Pharyngitis, and one each Bronchopneumonia, Chronic Bronchitis, and Common Cold. This experience emphasizes the confusion that may result because of the pharyngeal reaction in Hemorrhagic Fever.

Another point of some importance is that these patients sometimes complain of cough, usually on the basis of chronic exposure to dust or incidental bronchitis. In a few cases, no other explanation could be found for persistent cough. However, if careful attention is paid to other systemic symptoms, and the laboratory findings, the correct diagnosis will not be missed.

Some cases in which nausea and vomiting were prominent were initially suspected of food poisoning. Routine urinalyses on patients with vomiting helped to avoid this error.

Another condition sometimes confused with Hemorrhagic Fever was Infectious Mononucleosis. This disease is fairly common among troops, and its symptoms, resemble those of early Hemorrhagic Fever. However, the lymphadenopathy, hepato-splenomegaly, and high atypical lymphocyte count readily differentiate it.

A common infection which may cause confusion in its early pre-icteric stage is Infectious Hepatitis. The two diseases have nausea, anorexia, fever, and abdominal and back pain in common. However, the absence of pharyngeal injection, petechiae, and albuminuria, and, when present, the finding of a palpable, tender liver, differentiate Hepatitis in most cases.

Finally, the headache as well as the back pain and fever seen in Malaria has sometimes led to diagnostic errors, but this disease is differentiated by the splegomegaly, with normal white blood count, the positive smear, and the response to chloroquine therapy.

Summary

Experience with the large number of cases of Epidemic Hemorrhagic Fever evacuated through the Clearing Station in the past four months has emphasized certain findings of considerable significance in the early field diagnosis of this disease. Retro-orbital pain, backache, severe anorexia, nausea, and emesis in the presence of fever suggest the diagnosis. Physical findings of most value are the severe "toxicity" of the patient, an intense erythematous blush of the face and neck, conjunctival and pharyngeal injection out of proportion to any pharyngeal symptoms, and, when present, petechiae which appear first on the palate, and later in the axillae. Polymorphonuclear leukocytosis is of value when present, but is far from specific. Albuminuria is an important finding, but may be absent in early cases. Peculiar mononucleated bodies have been found to occur in the urine in this disease, sometimes before the appearance of albuminuria, and seem to be of diagnostic value. Lipiduria is also present early. The rapidity with which urinary involvement can appear and progress emphasizes the importance of repeated urinalyses during evacuation and early hospitalization.

In our hands, the disease was most commonly confused with Acute Pharyngitis, Influenza, and Infectious Mononucleosis, although pre-icteric, Infectious Hepatitis must also be differentiated from early Hemorrhagic Fever.

Occasional atypical cases without fever, with multiple vague symptoms, or with fever as their only finding, lead to further difficulty in diagnosis. It is to be emphasized, however, that although the early picture of this disease is almost entirely non-spec-

ific, careful study with the above points in mind will permit a reasonably accurate diagnosis in the majority of cases.

ACKNOWLEDGEMENTS: The authors wish to express their debt to Major John T. Maloney, Mobile Unit No. 1, 1st Medical Field Laboratory, for his encouragement and assistance in laboratory procedures used to study this disease. Credit is also due to the laboratory technicians of Clearing Company, especially Sgt. Thomas Atkinson, whose careful and proficient work made laboratory diagnosis of such value in the field.

PNEUMOCOCCAL MENINGITIS SUCCESSFULLY TREATED WITH MASSIVE DOSAGE PENICILLIN THERAPY

1st Lt Richard B. Kleiman, MC, USA Hospital, 8166th Army Unit

PRIOR to the advent of penicillin therapy, pneumococcal meningitis carried an almost 100% mortality rate. Sweet, in 1945, reported 40 sulfonamide-treated cases with 93% mortality. Among 66 patients receiving penicillin in addition, only 62% died. Average case fatality rates in those penicillin treated cases reported prior to 1947 were 49%. Dowling and Sweet in 1949 reported 66 patients treated with "conventional-size" doses of parenteral penicillin plus multiple intrathecal injections, the mortality rate being 62%. Among 21 patients treated with intramuscular penicillin only, but in a dosage of 12 million units daily, mortality fell to 38%. Although these figures are not statistically significant, they do reflect a decreasing mortality rate with increased penicillin dosage. If in addition, the central nervous system damage reportedly due to intrathecal penicillin is considered, it would seem that the treatment of choice of pneumococcal meningitis at the present time consists of intramuscular penicillin in very high dosage.

The following case report is submitted as an example of pneumococcal meningitis successfully treated with massive intramuscular penicillin.

W.H.L. (Register No. 363), a thirty-one year old white male Sergeant entered the hospital on 9 January 1952 complaining of headache and fever of 24 hours duration. Past history revealed that patient had been seen in November 1951 because of a draining right ear. At that time a small perforation of right tympanic membrane was reported and films of the right mastoid suggested chronic mastoiditis.

The present illness had begun with shaking chills and fever, followed in 24 hours by a throbbing headache at the vertex, accentuated by coughing. There were no associated symptoms other than general malaise.

Physical examination revealed a well developed, well nourished white male in no evident distress. T.98.6, P 80, BP 130/80. Head, EENT, chest, heart, abdomen, genetalia, skin negative. There was no sinus or mastoid tenderness, no nuchal rigidity. The right tympanic membrane was thickened, but no perforation was visualized.

Thirty minutes after completion of physical examination, the patient suddenly exhibited a grand mal clonic convulsion without localizing features, after which the patient was in coma. Pupils were widely dilated, did not react to direct or consensual light, and eye balls wandered incoordinately. Deep reflexes were hyperactive bilaterally, with bilateral Hoffman and Babinski responses. There was marked nuchal rigidity, and patient grimaced on flexion of neck. Lumbar puncture revealed a markedly turbid fluid, actually milky in appearance, with a pressure of 300 plus mm of fluid. Cell count was 15,000 with 32% neutrophiles and 68% lymphocytes. Sugar was 10.2 mgm per cc, protein 160 mgm per cc, Pandy markedly positive. Direct gram stained smear of spinal fluid revealed a few diplococci, thought to be gram positive.

Other laboratory work revealed a red cell count of 3.62 million with 11.8 Gm hemoglobin, total white cells were 25,100 with 89% neutrophiles, 9% lymphocytes and 2% monocytes. Urine was clear, Cardiolipin negative. Culture of spinal fluid and blood revealed a luxuriant growth of pneumococci after 14 hours incubation.

Immediately after lumbar puncture, the patient was started on crystallin penicillin, 2 million units every three hours using multiple injection sites for each individual dose. After twelve hours penicillin, dosage was increased to 2 million units every two hours. Because a meningiococcal infection could not be ruled out at the time of lumbar puncture, sodium sulfadiazine 5 Gm in 1000 cc 1/6 M. lactate initially, followed by 2 Gm every 6 hours intravenously was instituted. After twenty-four hours, sulfadiazine was discontinued. Aureomycin by mouth was also used later in the course, as will be discussed below.

During the period of coma, the only positive neurological finding was a continued turning of the head to the right, the patient resisting turning of head to left. The eyes did not deviate.

After fifty hours penicillin therapy, because patient was still in coma with a remittent temperature to 103, lumbar puncture was again performed. Initial pressure was plus minus 280 mm fluid. Approximately 15 cc of fluid was removed, at which time patient immediately became conscious and spoke rationally, complaining of generalized headache. The spinal fluid was approximately 1/3 as turbid as on the previous tap, contained 5000 cells, 70% polys. Sugar was 40 mgm per cc, and protein 80 mgm per cc.

The patient continued to improve rapidly, although a remittent temperature to 103 degrees persisted for the next three days. Five days after onset of therapy patient was clinically well with normal neurological findings, including visual field examination. After a 12 day convalescence he was discharged to duty.

Skull, sinus and mastoid films taken early in the illness were technically unsatisfactory. Repeat films after patient became conscious revealed bilateral clouding of maxillary antra, considered indicative of healing sinusitis. Mastoid films revealed no definitive abnormality. Chest film was negative.

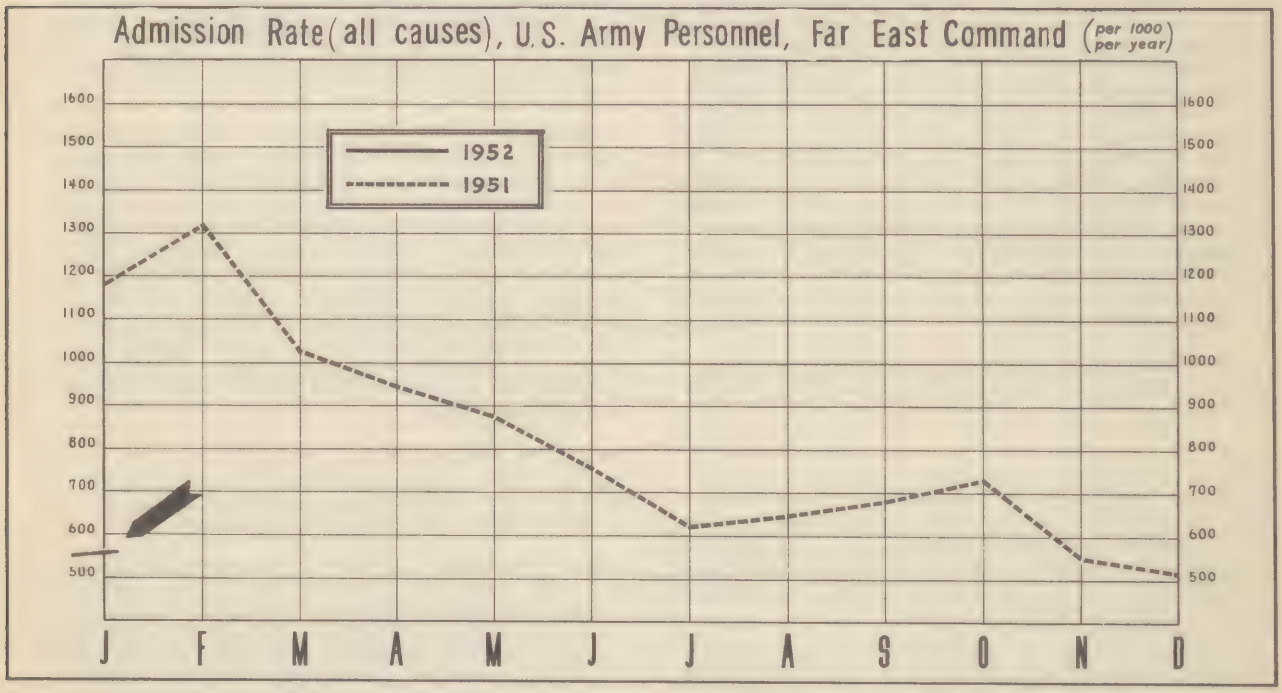
Sensivity studies on the isolated pneumococcus revealed it sensitive to penicillin, and very highly sensitive to aureomycin. Aureomycin was given after the second spinal tap. The marked improvement in spinal fluid findings had occurred prior to institution of aureomycin however. The organism was resistant to 20 mgm per cc of sulfadiazine. The high-

ost blood sulfa concentration obtained was 12 mgm per cc. Spinal fluid penicillin level of the second fluid specimen was reported as showing antibiotic activity equivalent to 0.8 units of penicillin per cc.

Because of the sudden onset of convulsions and coma, nuchal rigidity and milky spinal fluid, following a negative physical examination, the possibility of an abscess having ruptured into the ventricular system or subarachnoid space was considered. Whether the sinusitis was pathogenetically related is purely conjectural. This case is considered an example of pneumococcal meningitis successfully treated with massive dosage penicillin therapy.

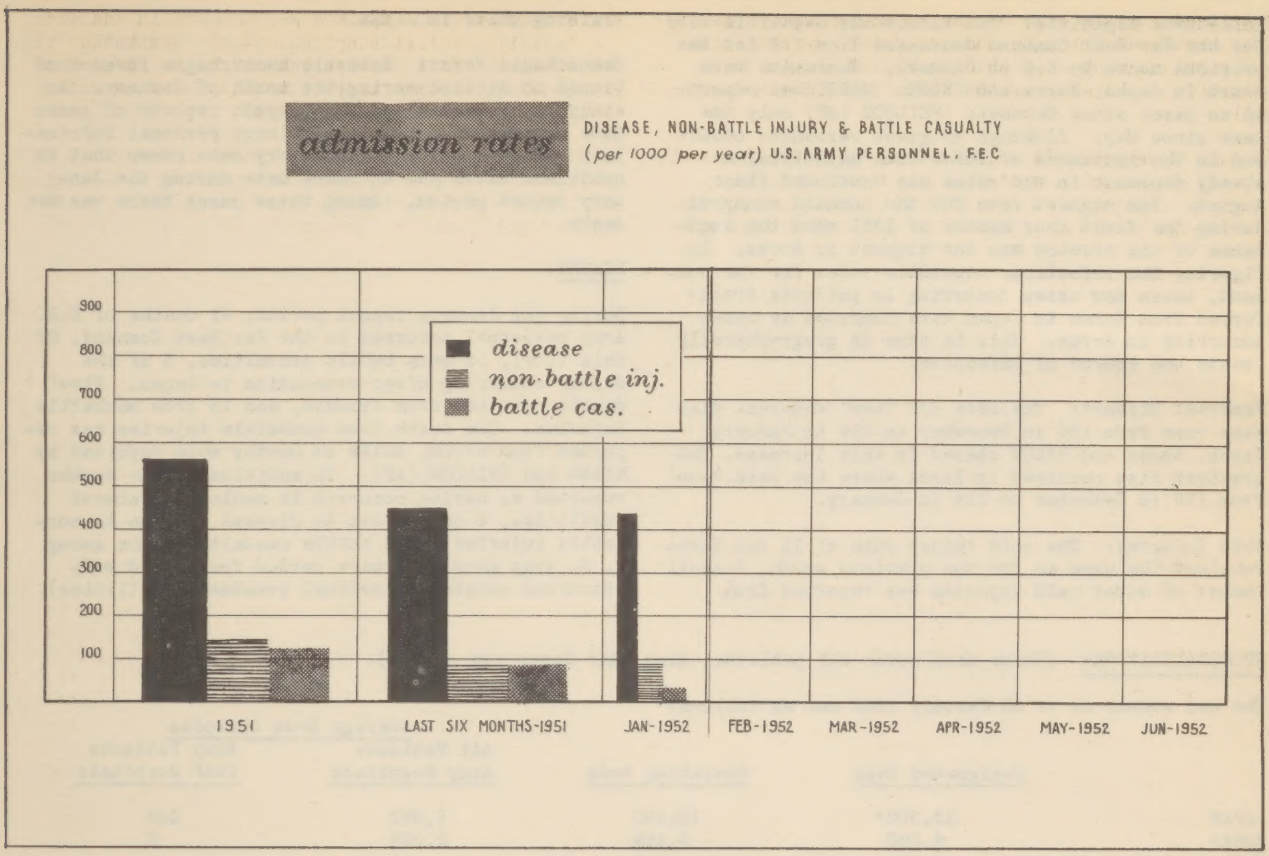
REFERENCES:. Dowling, Sweet, Robinson, Zellers, Hersh: The Treatment of Pneumococcal Meningitis with Massive Doses of Systemic Penicillin: American Journal of Medical Sciences, 217, 194, Feb 49.

HEALTH OF ARMY TROOPS, FEC



Admission rates per 1,000 troops per annum, Army personnel, for the five-week period ending 30 January 1952, were as follows:

	FEC	JAPAN	KOREA	MARBO	PHILCOM (AF)	RYCOM
All Causes	546	447	600	304	226	489
Diseases	436	399	455	132	194	444
Injuries	90	47	114	172	32	45
Battle Casualties	20	0	31	0	0	0
Psychiatric	20	18	22	13	19	8.4
Common Respiratory Diseases and Flu	87	107	76	79	39	117
Primary Atypical Pneumonia	3.3	2.6	3.9	0	0	0
Bacillary Dysentery	.72	.10	.32	0	6.5	11
Amebiasis	.66	.67	.65	0	0	.77
Malaria, new	1.2	.67	1.4	0	13	.77
Infectious Hepatitis	5.9	4.5	6.4	0	6.5	9.2
Dermatophytosis	3.3	4.0	2.7	0	6.5	6.9
Rheumatic Fever	.36	.38	.32	0	0	.77
Venereal Diseases	214	227	214	13	84	146
			DAILY NON-EFFECTIVE RATE			
All Causes	23	52	10	2.8	35	11



Health of the Far East Command for the month of January 1952 (unless otherwise specified) refers to Army personnel only.

ADMISSION RATES:

Disease: The disease admission rate to all medical treatment facilities in the Far East Command was 436 per 1000 troops per annum during January. This is an increase from the 400 rate for the previous month, but considerably less than the rate of 654 for January 1951. The rate for Japan showed little change while the Korea rate rose to 455 from 411 in December. No notable changes in the disease rate occurred in PHILCOM (AF), MARBO or RYCOM. Infectious hepatitis, malaria, dysentery, neuropsychiatric conditions and hemorrhagic fever rates continued to decrease. Common respiratory diseases and influenza and venereal diseases increased slightly. Two cases of diphtheria occurred in the command. There were no epidemics reported during January. An unusually high number of cases of bacillary dysentery was reported from RYCOM.

Nonbattle Injuries: The Far East Command nonbattle injury rate of 90 is a decrease from the 95 rate reported for the previous month. The January 1951 rate of 255 was the highest for the year. From this rate, a downward trend continues through January of this year. The Japan rate dropped from 62 in December to 47 in January, while the Korea rate rose only slightly from 112 to 114 for the same period.

Battle Casualties: The Korea battle casualty rate of 31 for January is the lowest rate reported since the beginning of the Korean conflict. The December rate was 36.

DAILY NON-EFFECTIVE RATE:

The daily non-effective rate for the Far East Command was 23 for January as compared to 27 for December. This decrease reflected a decrease in the Japan rate from 68 to 52, which in turn was a reflection of a decrease in the number of battle casualties evacuated from Korea. The RYCOM and PHILCOM (AF) non-effective rates remain stable.

DISEASES:

Common Respiratory Diseases and Influenza: The Far East Command rate increased slightly during January from the December rate of 80 to 87. The rate for January last year was 203, the highest rate of the year. No notable changes were reported in Japan and Korea. Both RYCOM and MARBO reported increases which account for the slight rise in the Far East Command rates. No great seasonal rise has occurred in any of the major commands. The July rate of 53 was the lowest for the year.

Psychiatric: The incidence of psychiatric conditions continues to decrease from 23 in December to 20 in January. The Japan rate of 18 remained the same as for the previous month. The decrease in the Korea rate from 26 to 22 is parallel to the decrease in battle casualties.

Infectious Hepatitis: The infectious hepatitis rate for the Far East Command decreased from 7.4 for the previous month to 5.9 in January. Decreases were noted in Japan, Korea and RYCOM. MARBO has reported no cases since October; PHILCOM (AF) only one case since May. Although no great variances occurred in the incidence of infectious hepatitis, a steady decrease in the rates has continued since August. The highest rate for the command occurred during the first four months of 1951 when the incidence of the disease was the highest in Korea. In figuring the infectious hepatitis rates for the command, those new cases occurring in patients transferred from Korea to Japan were computed as cases occurring in Korea. This is done to geographically locate the source of infection.

Venereal Disease: The rate for "new" venereal disease rose from 185 in December to 214 in January. Japan, Korea and RYCOM shared in this increase. The greatest rise occurred in Korea where the rate rose from 178 in December to 214 in January.

Cold Injuries: The cold injury rate of 11 for Korea remained the same as for the previous month. A small number of minor cold injuries was reported from training units in Japan.

Hemorrhagic Fever: Epidemic hemorrhagic fever continued to decline during the month of January. An analysis of individual telegraphic reports of cases made by name of patient, pertinent personal information and clinical and laboratory data shows that 49 confirmed cases had an onset date during the January report period. Among these cases there was one death.

DEATHS:

During the January report period, 41 deaths of U.S. Army personnel occurred in the Far East Command. Of this total, 18 were battle casualties, 3 of the deaths occurring after evacuation to Japan. Five deaths resulted from disease, and 18 from nonbattle injuries. One death from nonbattle injuries was reported from RYCOM, while no deaths were reported by MARBO and PHILCOM (AF). In addition to the deaths reported as having occurred in medical treatment facilities, 6 deaths due to disease, 26 due to nonbattle injuries and 2 battle casualty deaths among U. S. Army personnel were carded for record only (occurred outside of medical treatment facilities).

HOSPITALIZATION: (These data cover all patients, Army, Air Force and others).

The bed status as of 30 January 1952 was as follows:

	Designated Beds	Operating Beds	Average Beds Occupied: All Patients Army Hospitals	Average Beds Occupied: Army Patients USAF Hospitals
JAPAN	13,300*	10,980	5,967	268
KOREA	4,500	5,189	2,089	9
PHILCOM (AF)	100	116	55	9
RYCOM	400	344	202	0
FEC	18,300	16,629	8,313**	286

In Korea there were 13,000 PsW operating beds, 7,903 of which were occupied by PsW and 1,170 by civilian internees.

(* Includes 2,000 TD Beds.)
(**Five patients in Naval Hospital, MARBO, not included in total. Medical responsibilities for Army personnel in MARBO assumed by Air Force. Medical reports submitted by Air Force.)

The percent of designated beds and operating beds in Army Hospitals occupied as of 30 January 1952, was as follows:

	Percent of Designated Beds Occupied	Percent of Operating Beds Occupied
JAPAN	46	54
KOREA	46	40
PHILCOM (AF)	55	47
RYCOM	51	59
FEC	45	50

EVACUATION:

Tabulated below is the number of patients (all types of personnel) evacuated from the major commands to the ZI during the four report weeks ending 25 January:

	By Air	By Water	Total
JAPAN	965	10	975*
PHILCOM (AF)	19	1	20
RYCOM	41	0	41
FEC	1,025	11	1,036

(*679 Patients originated from Korea)

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RESTRICTED Security Information

UNCLASSIFIED

The Chief Surgeon extends an invitation to all Far East Command medical personnel of the U. S. Army, Navy and Air Force, or of the United Nations, to prepare and forward with view to publication, articles of professional or administrative nature. It is assumed that editorial privilege is granted unless author states otherwise.

Capt. Charles A. Copeland, MSC EDITOR

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